

MEMORANDUM FOR: F/PR - Donald R. Knowles

FROM: F/PR1 - Eugene T. Nitta

SUBJECT: Report on the Applications for Scientific Research Permits and Amendments to Scientific Research Permits to take Steller Sea Lions [Permit Numbers 358-1564 and 782-1532; File Numbers 1016-1651, 1010-1641, 800-1664, 881-1668, and 434-1669]: Recommendation for Issuance

Abstract: Permit No. 358-1564

The Alaska Department of Fish & Game (ADF&G), Juneau, Alaska 99802-5526 (PI: Dr. Thomas Gelatt) requests a major amendment to scientific research Permit No. 358-1564. Permit No. 358-1564 authorizes the permit holder to take Steller sea lions of all ages and both sexes over a 5-year period in Alaska and British Columbia by aerial/boat surveys, capturing, handling, tagging, blood/biopsy sampling, branding, and accidental mortality. The permit holder requests authorization to administer Evans blue dye, collect additional blood and tissue samples from, and attach additional/different scientific instruments to Steller sea lions already authorized to be captured and handled, increase the frequency of aerial surveys and recaptures for purposes of scientific research, and increase the number of accidental mortalities.

Chronology

May 21, 2001	Date of application - Part 1
June 15, 2001	Application - Part 1 received complete
July 5, 2001	Application - Part 1 distributed
July 5, 2001	Application - Part 1 published in the <u>Federal Register</u>
July 30, 2001	Marine Mammal Commission comments received on application - Part 1
August 6, 2001	Close of public comment period
December 18, 2001	Date of application - Part 2
December 28, 2001	Application - Part 2 received complete
February 21, 2002	Date of application - Part 3
March 5, 2002	Application - Part 3 received complete
June 21, 2002	FONSI for Environmental Assessment on the Effects of NMFS Permitted Scientific Research Activities on Threatened and Endangered Steller Sea Lions signed by Assistant Administrator for Fisheries
June 27, 2002	Application - Parts 2 & 3 published in the <u>Federal Register</u>
June 28, 2002	Application - Parts 2 & 3 distributed
July 3, 2002	Section 7 consultation requested
July 29, 2002	Close of public comment period

August 2, 2002 Additional Marine Mammal Commission comments received
 November 7, 2002 Biological Opinion issued

Abstract: Permit No. 782-1532

The National Marine Mammal Laboratory (NMML), National Marine Fisheries Service, NOAA, Seattle, WA 98115-0070 (PI: Dr. Thomas Loughlin) requests a major amendment to scientific research Permit No. 782-1532. Permit No. 782-1532 authorizes the permit holder to take Steller sea lions of all ages and both sexes over a 5-year period in Alaska, California, Washington, and Oregon by aerial/boat surveys, capturing, handling, tagging, blood/biopsy sampling, branding, and accidental mortality. The permit holder requests authorization to increase the frequency of takes by aerial surveys, include Southeast Alaska in monthly surveys, increase the number of animals to be incidentally harassed during scat collection, and increase the number of accidental mortalities. Additional procedures for animals already authorized for capture, including using gas anesthesia, branding of any animal captured, injecting Evans blue dye and deuterated water, collecting additional blood and tissue samples, and using bioelectric impedance analysis are also requested.

Chronology

May 4, 2001	Date of application - Part 1
May 23, 2001	Application - Part 1 received complete
June 7, 2001	Application - Part 1 distributed
June 8, 2001	Application - Part 1 published in the <u>Federal Register</u>
July 9, 2001	Close of public comment period
July 30, 2001	Marine Mammal Commission comments received on application - Part 1
December 14, 2001	Date of application - Part 2
December 21, 2001	Application - Part 2 received complete
June 21, 2002	FONSI for Environmental Assessment on the Effects of NMFS Permitted Scientific Research Activities on Threatened and Endangered Steller Sea Lions signed by Assistant Administrator for Fisheries
June 27, 2002	Application - Part 2 published in the <u>Federal Register</u>
June 28, 2002	Application - Part 2 distributed
July 3, 2002	Section 7 consultation requested
July 29, 2002	Close of public comment period
August 2, 2002	Additional Marine Mammal Commission comments received
November 7, 2002	Biological Opinion issued

Abstract: File No. 1010-1641

The Aleutians East Borough, Juneau, Alaska 99801 (PI: Kate Wynne) requests a scientific research permit to take Steller sea lions by harassment during aerial surveys, vessel-based behavioral observations, and scat collection. The purpose of the research is to provide additional information on seasonal prey consumption by Steller sea lions through scat collection at rookeries and haulouts along the Alaska Peninsula and Eastern Aleutian Islands and to improve

the accuracy and precision of population indices through expanded aerial and vessel surveys in the western Gulf of Alaska.

Chronology

July 9, 2001	Date of application
August 15, 2001	Application received complete
August 20, 2001	Application distributed
August 22, 2001	Application published in the <u>Federal Register</u>
September 21, 2001	Close of public comment period
October 17, 2001	Marine Mammal Commission comments received on application
June 21, 2002	FONSI for Environmental Assessment on the Effects of NMFS Permitted Scientific Research Activities on Threatened and Endangered Steller Sea Lions signed by Assistant Administrator for Fisheries
July 3, 2002	Section 7 consultation requested
August 2, 2002	Additional Marine Mammal Commission comments received
November 7, 2002	Biological Opinion issued

Abstract: File No. 1016-1651

Dr. Glenn VanBlaricom, Washington Cooperative Fish and Wildlife Research Unit, School of Aquatic and Fishery Sciences, University of Washington, Seattle, WA 98195 requests a scientific research permit to take threatened and endangered Steller sea lions in the Aleutian Islands, Gulf of Alaska, and southeast Alaska by remote biopsy darting, incidental harassment, and accidental mortality, to collect blubber samples for analysis to assess prey selection. Some samples will be exported to Canada for analysis. Northern fur seals (*Callorhinus ursinus*) and harbor seals (*Phoca vitulina richardsi*) may be incidentally harassed during biopsy sampling.

Chronology

September 5, 2001	Date of application
November 30, 2001	Application received complete
June 21, 2002	FONSI for Environmental Assessment on the Effects of NMFS Permitted Scientific Research Activities on Threatened and Endangered Steller Sea Lions signed by Assistant Administrator for Fisheries
June 27, 2002	Application distributed
June 27, 2002	Application published in the <u>Federal Register</u>
July 3, 2002	Section 7 consultation requested
July 29, 2002	Close of public comment period
August 2, 2002	Marine Mammal Commission comments received on application
September 18, 2002	Applicant responses to comments received
November 7, 2002	Biological Opinion issued

Abstract: File No. 800-1664

Dr. Randall Davis, Department of Marine Biology, Texas A&M University, Galveston, TX 77551 requests a scientific research permit to take threatened and endangered Steller sea lions in Alaska by capture, anesthesia, hot-branding, tissue sampling (including blood, skin, and blubber), attachment of scientific instruments (video system/data logger and satellite transmitters), and accidental mortality to compare hunting behavior and three-dimensional movements of free-ranging adult females (including pregnant animals) and juveniles of both sexes at various rookeries, as it relates to prey preferences and predator-prey relationships.

Chronology

January 16, 2002	Date of application
February 8, 2002	Application received complete
June 21, 2002	FONSI for Environmental Assessment on the Effects of NMFS Permitted Scientific Research Activities on Threatened and Endangered Steller Sea Lions signed by Assistant Administrator for Fisheries
June 27, 2002	Application distributed
June 27, 2002	Application published in the <u>Federal Register</u>
July 3, 2002	Section 7 consultation requested
July 29, 2002	Close of public comment period
August 2, 2002	Marine Mammal Commission comments received on application
September 16, 2002	Applicant responses to comments received
November 7, 2002	Biological Opinion issued

Abstract: File No. 881-1668

The Alaska SeaLife Center (ASLC), Seward, Alaska 99664 (PI: Don Calkins) requests a scientific research permit to take threatened and endangered Steller sea lions in Alaska by capture, hot-branding, flipper tagging, collection of blood and tissue samples from, attachment of external scientific instruments to, implanting scientific instruments in, holding in captivity for up to 3 months, conducting controlled feeding and endocrinology experiments on, accidental mortality, and harassment incidental to these activities and remote monitoring. The overall purpose of the research is to collect information on the health status, physiology, life history, foraging behavior and habitat use of Steller sea lions. Implanting of scientific instruments, holding in captivity, and conducting controlled feeding and endocrinology experiments are not being considered for authorization at this time due to their complex and controversial nature. Consideration of authorization of these activities is contingent upon further environmental analyses and receipt of information on tag validation studies to be conducted under a separate permit.

Chronology

March 11, 2002	Date of application
April 24, 2002	Application received complete

June 21, 2002	FONSI for Environmental Assessment on the Effects of NMFS Permitted Scientific Research Activities on Threatened and Endangered Steller Sea Lions signed by Assistant Administrator for Fisheries
June 27, 2002	Application distributed
June 27, 2002	Application published in the <u>Federal Register</u>
July 3, 2002	Section 7 consultation requested
July 29, 2002	Close of public comment period
August 2, 2002	Marine Mammal Commission comments received on application
September 9, 2002	Applicant responses to comments received
November 7, 2002	Biological Opinion issued

Abstract: File No. 434-1669

The Oregon Department of Fish and Wildlife (ODFW), Corvallis, Oregon 97330 (PI: Robin Brown) requests a scientific research permit to take threatened Steller sea lions in California, Washington, and Oregon by capture, hot-branding, flipper tagging, collection of blood and tissue samples from, attachment of external scientific instruments to, harassment incidental to these activities and remote monitoring, and accidental mortality. The purpose of the research is to continue monitoring the status of the Alaskan Steller sea lion population and to identify causes of the population decline so as to provide for the population's recovery.

Chronology

March 11, 2002	Date of application
April 24, 2002	Application received complete
June 21, 2002	FONSI for Environmental Assessment on the Effects of NMFS Permitted Scientific Research Activities on Threatened and Endangered Steller Sea Lions signed by Assistant Administrator for Fisheries
June 27, 2002	Application distributed
June 27, 2002	Application published in the <u>Federal Register</u>
July 3, 2002	Section 7 consultation requested
July 29, 2002	Close of public comment period
August 2, 2002	Marine Mammal Commission comments received on application
November 7, 2002	Biological Opinion issued

Comments on All Applications

The Marine Mammal Commission (MMC) recommended that NMFS defer final action on the permit applications pending (1) receipt and review, in consultation with the Commission, of supplemental information that addresses the issues discussed in their comments (attached); and (2) clarification, in response to the Commission's comments, of the basis for the Service's finding that the proposed activities, if authorized, would not result in a significant impact to Steller sea lions. Upon resolution of these questions and concerns, the Commission recommends that the Service grant approval of the requested activities, subject to the following conditions:

- the researchers take steps to minimize disturbance of the subject animals by exercising caution when approaching animals, particularly mother-pup pairs, and halt an approach if there is evidence that the activity may be interfering with pair bonding, nursing, feeding, or other vital functions;
- all branding activities be accompanied by effective programs to monitor their short- and long-term effects;
- whenever possible, new invasive research procedures be tested on non-listed otariid species and on captive Steller sea lions before they are used on sea lions in the wild to ensure that the proposed techniques can be employed safely;
- surgical implants of instruments be performed by experienced marine mammal veterinarians, and the animals be fully recovered from the anesthesia and exhibiting no ill effects of the surgery prior to release;
- an experienced marine mammal veterinarian be present in the field to carry out or to provide direct on-site supervision of all activities involving anesthesia of animals;
- surgical implantation of instruments be immediately suspended, until reauthorized by the Service, in the event that two animals die or are injured during or following the surgery and the mortality or injury can reasonably be attributed to that activity;
- the Service, in consultation with the applicants, review the basis for the numbers of accidental mortalities requested and provide reasonable justification for the number that can occur annually before research activities must be suspended. It may be useful, as part of such review, to examine the data concerning the number of accidental mortalities authorized and the number of animals actually killed during permitted Steller sea lion research over the past five years. On a related matter, in the event that a lactating female is killed or seriously injured as a result of the activities, the female's orphaned pup should be humanely provided for (i.e., salvaged and cared for, or if salvage is not possible, euthanized);
- inasmuch as the use of a crossbow for biopsy sampling has not been previously used on Steller sea lions, the Service be satisfied that the individual(s) carrying out the biopsy sampling are sufficiently experienced and the technique and equipment have been adequately tested prior to authorizing the activity on animals in the field;
- the proposed studies have been reviewed by the permittee's Institutional Animal Care and Use Committees in accordance with § 2.31 of the Animal and Plant Health Inspection Service's regulations governing the humane handling, care, treatment, and transportation of marine mammals;
- the Service ensure that activities to be conducted under these permits and those of other permit holders who might be carrying out research on the same species in the same areas

are coordinated and, as possible, data are shared to avoid unnecessary duplication of research and disturbance of animals; and

- as appropriate, the applicants obtain the necessary permits under the Convention on International Trade in Endangered Species of Wild Fauna and Flora prior to importing or exporting tissue samples into or from the United States.

Response to MMC comments: Due to the time-sensitive nature of the permit requests, NOAA Fisheries did not forward additional comments to the MMC for consideration. However, the responses of applicants for File Nos. 1016-1651, 800-1664, and 881-1668 to the comments from the MMC are attached. The applicants have responded to the satisfaction of the NOAA Fisheries. In addition, the permits contain conditions that address the above concerns of the MMC, including measures intended to minimize the potential for adverse impacts and unnecessary duplication overall. The applicant for File No. 434-1669 did not respond, however, the permit has been conditioned to address the concerns expressed regarding activities in that application. There were no comments specific to Permit Nos. 358-1564 and 782-1532 that required responses from the Permit Holders.

The U.S.D.A. Animal and Plant Health Inspection Service (APHIS) provided comments on application File No. 881-1668 (ASLC). The APHIS states it cannot recommend approval of the requested permit until the following concerns about the application are addressed:

- The facilities proposed do not meet the space requirements found in Section 3.104 of 9 CFR.
- APHIS cannot approve facilities that are not yet built. The proposed size of pools would be too small to meet space requirements without a variance and there is no medical or study-related reason for such a variance.
- The protocols presented should not be approved by the respective IACUCs under the AWA unless the principal investigators have done the appropriate literature searches for alternatives to painful and distressful procedures, protocols are in place for pre- and postoperative care, and it is clarified that only qualified veterinarians will be performing surgical and sampling procedures other than blood draws.
- The alternative searches must include looking for alternatives to the intraperitoneal implant of the tracking device, using anesthesia for blood sampling and hot branding. APHIS cannot support hot branding of marine mammals unless it is shown that there is no alternative. Cold branding and other methods must be considered.
- It is not apparent what animals would be subject to multiple protocols. All animals should be identified as to which protocols they would be subjected to.

- APHIS remains concerned about any protocol that calls for fasting of an animal. Such experiments are noncompliant with the AWA requirements for animals to be provided full ration of food and water daily, unless there is an approved protocol with definite endpoints.
- APHIS remains concerned about the use of anesthesia when doing hormonal studies because the risk to the animal is usually greater than the potentially flawed data obtained.
- APHIS remains concerned about blood collection techniques in light of the past necropsy report of peri-puncture hemorrhage that contributed to the death of a marine mammal.
- The proposed transportation arrangements for the animals is not currently compliant with the AWA.

Applicant response: The activities of primary concern to APHIS relate to temporary captivity and associated studies. These activities are not being considered for authorization at this time, as noted above. The applicant for File No. 881-1668 has provided responses to the comments from the APHIS (see attached). The NMFS is satisfied with the applicant's responses. In addition, the permit contains conditions to address many of these concerns, including proper IACUC reviews and space requirements.

Public Comments: Substantial comments were received from the Humane Society of the United States (HSUS), the Trustees for Alaska (representing Greenpeace, Oceana, Sierra Club, and The Ocean Conservancy), and a qualified veterinarian, regarding the applications for permits and permit amendments. Their complete comments are attached; the following is a summary of the main issues and concerns raised.

HSUS Comments: The HSUS agrees that it is critical to develop a better understanding of the causative factors in the declines of Steller sea lions; however, it is not clear that there has been adequate coordination of the various research proposals, nor is it clear that the proposals meet all of the conditions stipulated in the MMPA. Of the three alternatives provided in the EA, HSUS favors Alternative 3, reallocating intrusive research so that only the eastern portion of the stock would be affected unless a project was directly related to conservation and management needs for that stock. The HSUS does not agree that the finding of negligible impacts, particularly for the western stock, is well founded. The HSUS general and specific comments are summarized as follows:

(1) Compliance with issuance criteria: While individual permit applications may comply with some or all of the permit issuance criteria specified at 50 CFR 216.34, it is not clear that these proposals, in sum, can comply with all of them, particularly regarding ensuring humaneness and avoiding significant adverse impacts on marine mammal species or stocks. The HSUS recommended that at least all or part of two of the seven permit applications be denied based on these issuance criteria.

(2) Monitoring and Coordination: There is apparent duplication in sampling, and it is not clear how NMFS can ensure compliance with permit issuance criteria given that it will only develop a monitoring plan after the permits have been issued and research is underway. The time for developing a plan to monitor potential effects is before the research is undertaken.

It is not clear whether or how a 5-year permit will be halted to allow evaluation of longer-term effects. It is clear that a plan to monitor lethal and sub-lethal effects is not in place at this time. The number of animals that will be harassed/disturbed by the various projects is enormous; harassing this large a number of endangered or threatened species should not be taken lightly. The proposed monitoring plan described in the EA does not appear to consider the stress of the cumulative effects of being captured multiple times, and of being harassed during survey activities and scat collection on rookeries.

(3) Research related mortality: There appears to be an unacceptably high level of stress and mortality allowed for a stock that is already declining in many parts of its range. It is not clear whether NMFS' proposal to force consultation among researchers to assure that not more than 20 animals are incidentally killed will be time-sensitive or whether consultation will take place before the number is exceeded given that a monitoring plan does not appear to be in place. NMFS' argument that these 20 mortalities per year from the western stock represent less than 10% of the PBR and are therefore negligible, does not appear to account for the other potential sources of mortality for that stock (i.e., native harvest and fisheries related mortality). The MMPA did not intend for each user to have access to the entire PBR (nor one assumes the entire number defining the uppermost bound of negligible impact) such that the cumulative impact is well over PBR. The most conservative estimate for mortality from harvest and fisheries interactions is 199 animals per year from the western stock, which is only 9 less than the entire PBR. If scientific permit-related mortalities for this stock can reach 10 (the number that merely triggers consultation among permit holders), then the entire PBR will have been exceeded. The HSUS feels that insufficient attention was given to consideration of post-capture myopathy in the EA.

(4) Specific comments on application to amend Permit No. 358-1564 (ADF&G): The activities under this permit are Alaska-wide and therefore likely to overlap with other proposed permittees, allowing multiple sampling of animals unless there is strict coordination. The HSUS suggests that the ADF&G spend more effort trying to re-sight branded animals and analyze the information from re-sighting, rather than continuing to brand animals. If continued or additional branding is authorized, the applicant must be required to monitor post-branding effects and provide evidence of little or no effects of their various activities on rookeries.

(5) Specific comments on application to amend Permit No. 782-1532 (NMML): The HSUS reiterates their concern, expressed in the specific comments on Permit No. 358-1564, about the effects of hot branding, specifically on pups. The HSUS points out that the recovery time for animals immobilized using gas anesthesia (fully recovered within 8 hours) is longer than the period of time that animals will be observed under this permit. Without post-release monitoring, the fate of these animals, if released prior to 8 hours, will apparently be unknown. The HSUS reiterates that the applicant should institute a post-capture monitoring program and assessment of condition.

(6) Specific comments on application File No. 1016-1651 (Dr. VanBlaricom): The HSUS states that it should be mandatory that the proposed collection of biopsy samples under this permit be done in conjunction with NMML and ADF&G to avoid duplicative sampling of animals.

(7) Specific comments on application File No. 800-1664 (Dr. Davis): It is not entirely clear why Dr. Davis, who is receiving funding from two other permit applicants (NMFS and ASLC) cannot conduct his activities under the auspices of their permits rather than seeking

separate take authorizations to avoid duplicative sampling or harassment wherever possible. The research related mortality rate of 20% for this proposed permit seems unacceptably high, particularly for juveniles. While underwater videotaping may be interesting, HSUS does not believe it is critical to understanding the foraging issues facing Steller sea lions. While there may be some justification for some of the ancillary tagging proposed in this application, it is not clear why this is not duplicative information. In light of the extremely high mortality rates, HSUS does not see that the justification for this permit outweighs the potential risk to animals, as would be required under the MMPA and ESA.

(8) Specific comments on application File No. 434-1669 (ODFW): While it is not clear why it is necessary to change the lead agency for the research already authorized under Permit No. 782-1532, the HSUS does not oppose the change and feels that the ODFW has demonstrated that they are the sole research group studying the Steller sea lion population in California, Washington and Oregon. The HSUS believes that NMFS should request post-capture monitoring of survival and re-sighting to fill apparent gaps in understanding this sort of information.

(9) Specific comments on application File No. 881-1668 (ASLC): Although they support the remote videotaping and the proposed demonstration of the efficacy of a floating trap that could be used as an alternative to chemical immobilization, the HSUS has grave concerns regarding this application and does not support the portions relating to capturing and holding animals for testing. Cumulative impacts of the projects proposed by the ASLC are not addressed in the EA. The HSUS reiterates their concerns regarding the use of anesthesia and post monitoring. There is no discussion about capture myopathy or death associated with anesthesia for the proposed surgically implanted transmitters. The HSUS questions the value of some of the information gained from live captured animals that are caged in either 12' or 20' diameter pens and subjected to constant testing, with regard to making reasonable conclusions about wild animals. The HSUS questions whether the stress responses of animals maintained under different conditions (e.g., space constraints and number of conspecifics in the cage) over the course of the permit will be the same and is concerned that data may therefore be compromised. The HSUS also believes that it is disingenuous for the applicant to claim that "all efforts will be taken to minimize exposure to humans," when the animals are being subjected to continual sampling and at least 8 of the animals will be subjected to highly stressful fasting or hormone "challenges." The HSUS finds that the proposed rate of research related mortality for this application (18% over three months) is unacceptably high for animals in a captive facility and that the level is far from humane or negligible. The HSUS therefore recommends that the portions of the permit related to capturing and holding animals for testing be denied.

The Trustees for Alaska (Greenpeace, Oceana, Sierra Club, and the Ocean Conservancy) Comments: The Trustees for Alaska support legitimate research into the causes of the decline of endangered Steller sea lions. However, they state that, in order to insure the survival and recovery of this species, it is vital that we act in a precautionary manner while gathering data that will contribute to our understanding of its life history and the role that various factors have played, or are playing, in the decline. Because of the scope of the research initiative and the anticipated impacts on great numbers of animals in threatened and endangered populations, it is essential that all direct, indirect and cumulative impacts of the research program are carefully evaluated and all projects are shown to be essential for the conservation of

the species. The general and specific comments and concerns expressed by the Trustees for Alaska are summarized as follows:

(1) NMFS has not demonstrated that the impacts of the proposed action will be insignificant or satisfy all permitting criteria. The Trustees are concerned that substantial direct, indirect, and cumulative effects of the proposed action in Alternative 2 of the EA may result in further jeopardy to the species. NMFS is frequently arguing from the absence of evidence (due to an inability to measure it or a failure to try) to an assumption of no harmful effects.

(2) NMFS has not shown that all projects and procedures in the proposed action are necessary and essential to the conservation of Steller sea lions. There are specific research proposals (e.g., the capture and long-term retention of wild animals as proposed by ASLC for surgical implantation of devices) that should not be permitted as described. The Trustees have major concerns about the efficacy of the experimental protocols, sampling regimes, and statistical power to detect effects, as well as the ability of NMFS to coordinate and synthesize the data generated by such a large research program involving many different agencies.

(3) The EA does not address the absolute need for an accompanying monitoring program to assess the effects of research on the threatened and endangered populations, as recommended by the Marine Mammal Commission in a letter dated July 27, 2001 addressing the proposed amendments to the NMML and ADF&G permits. An adequate monitoring program should enable NMFS to suspend permits if subsequent information indicates that the research impacts are unacceptable or are exceeding the number of mortalities and injuries authorized under the permit.

(4) The Trustees concur with the MMC's assessment of the projects, as outlined in the above mentioned July 27, 2001 letter, and conclude that the EA analysis is not adequate to distinguish between projects that merit permitting and those that are unnecessary, duplicative, inhumane, or in violation of other established permitting criteria.

(5) The Trustees have concerns about the scope of the EA: it appears that the analysis of various research activities is being piecemealed whereas the direct, indirect, and cumulative effects of all research activities should be analyzed in a single NEPA document.

(6) The cumulative effects analysis in the EA is internally confused and appears to be inadequate. The cumulative effects analysis needs to consider the effects of research stress being added to nutritional stress.

(7) The ASLC proposed project that entails capture and retention of wild juvenile sea lions for up to 3 months, during which time "life-history transmitters" would be surgically implanted, is a highly experimental and unvalidated technique. Using animals from an endangered population as guinea pigs to test the viability of the surgical implantation technique is not an appropriate form of research and should not be permitted at this time.

(8) The rationale for techniques such as tooth extraction and attachment of flipper tags, which may result directly or indirectly in increased mortality due to infection, illness, reduced foraging success or increased predation, is not evaluated in detail. No studies have been conducted that would allow NMFS to conclude that the effects of these practices are insignificant or benign.

(9) The Trustees have serious doubts about the usefulness of additional branding in the absence of a long-term monitoring/resighting component. The potential for harm from hot-branding large numbers of pups and young juveniles may be outweighed by the benefits to be gained from the ability to identify animals across multiple years, but only if there is a long-term

commitment to monitor the status of branded animals.

(10) Given the endangered and declining status of the western stock of Steller sea lions and concerns about the potential for increased killer whale predation on sea lions, NMFS should more carefully evaluate the extent to which research procedures may increase the incidence of infection, diseases and/or predation on test animals that are subjected to repeated stress and disturbance, immobilizing drugs, anesthesia, tooth extractions, biopsies, branding, attachment of instruments, or even long-term captivity and surgical implantation of experimental monitoring devices. That analysis and consideration is largely absent from the EA and adverse effects are largely dismissed based on a lack of evidence or lack of study.

(11) The Trustees underscore the concerns expressed previously by the Steller Sea Lion Recovery Team's peer-review workshops, which noted a lack of integrated research, poor condition of existing research projects, as well as serious limitations in experimental protocols, sample sizes, and statistical power to detect effects. The EA should have addressed these concerns and evaluated the degree to which proposed action will or will not remedy the limitations and shortcomings identified by peer reviewers of the existing research program.

(12) As a matter of NEPA process, the Trustees are concerned that NMFS issued the Final EA and signed the FONSI on this project without any involvement by the public. Accordingly, they urge NMFS to withdraw the FONSI and to issue a revised EA or EIS that takes into account the comments received on this document.

(13) Based on their analysis of the proposed action, the Trustees are concerned that there is a real risk that some of this research will simply cause unnecessary disturbance and increase mortality on the endangered stock without contributing significantly to the conservation of Steller sea lions. The Trustees recommend that NMFS withhold new or amended permits pending further evaluation of the research program in a substantially expanded EA or an EIS and consultation with the Steller Sea Lion Recovery Team.

Kimberlee Beckman, D.V.M., Ph.D. submitted substantial comments on application File No. 1016-1651 (Dr. VanBlaricom). Dr. Beckman is a wildlife veterinarian with extensive experience in performing blubber biopsies on four species of pinnipeds and has the necessary expertise to render an expert opinion on the techniques proposed in the application. Although Dr. Beckman supports the scientific research goals of the study, she expressed serious concerns about the impact of the actual darting technique on the health and well-being of juvenile and adult female Steller sea lions.

(1) The reference cited for the safety of the technique only used the dart on territorial adult male pinnipeds; it was not tested for safety in females or juveniles of any species. Given the thickness of the skin and underlying blubber layer in females and juveniles, particularly thin animals, and the ballistic force compression of the blubber layer due to the forward directed force of the flying dart, the dart will penetrate deeply into the muscle layer of these animals. Although muscle can be safely biopsied under controlled circumstances, it is quite risky to the animal without exact control over where the dart is placed.

(2) If the dart hits an area of the body overlaying the abdominal cavity or the thorax, serious and perhaps fatal injuries could occur which are not addressed in the application. The length of the dart, even without the additional ballistic compression, means that penetration of the peritoneal cavity or the pleural cavity is a risk. Penetration of either cavity will not kill the animal instantly (unless it hits the lung and lacerates a pulmonary vessel); if the viscera are

lacerated, the animal may die days later. If the dart penetrates or injures an artery within a muscle belly or a large superficial vessel such as the jugular vein, a fatal exsanguination [loss of blood] could occur within several hours. The application does not address this possibility.

(3) Accidental lethal takes are requested but there is no description of how animals will be monitored or assessed after darting or for how long. In the event of death, there is no indication that a necropsy will be performed to determine what occurred and how it might be prevented in the future, nor is there mention of tissue sampling/archiving.

(4) The risk of how a misplaced firing might impact the pup of a lactating female is not addressed, nor is the possibility of inadvertently hitting and injuring a young pup addressed. If the dart penetrates the mammary gland, the milk pouring from the wound and leaking into the underlying tissues could create a serious inflammatory reaction that would not only affect the health of the female but also the survival of the pup if the female develops mastitis [inflammation of the mammary gland].

Response to public comments:

- Note that the ASLC is not proposing to begin the controversial tag implant studies at this time, pending completion of a tag validation study to be conducted on California sea lions under another permit. In addition, NOAA Fisheries has deferred authorization of the tag implantation, as well as the proposed temporary captivity and associated studies pending further environmental analyses.
- NMFS Response to comments on Finding of No Significant Impact and compliance with issuance criteria: NMFS has assessed the effects of the increased scope of the research activities on Steller sea lions and, based on this assessment, and as indicated in Sections 2 and 4 of the Environmental Assessment, believes the activities to be conducted under the Proposed Action neither result in a significant increase in the level of take over the status quo such that an EIS is required, nor does the proposed action increase the level of takes such that the categorical exclusion made in previous determinations under NEPA should be altered (Sections 2.2, 4.1-4.6). The measures contained in this action may be controversial because some sectors of the public oppose some of the methodologies used in the proposed action. However, the most controversial of the methodologies [hot branding] is a minor component of the proposed action (See Chapter 4 of EA). Due to the recent jeopardy determination on the effects of the Bering Sea/Gulf of Alaska groundfish fisheries and the FY2001 congressional appropriations for the implementation of Steller sea lion protective measures, there is a heightened expectancy that the results from permitting research under the Proposed Action will provide information necessary such that the conservation and management of Steller sea lions might eventually result in a reduced impact on the commercial fisheries. In this regard the “Steller Sea Lion” issue, including the release of these permits, might be considered controversial. However, the need for the research outlined in the proposed action are recognized by all public sectors as being essential. In that regard, while the issue may be controversial, the issuance of these permits is not.

Further, a Biological Opinion analyzing the impacts of proposed action - the issuance of scientific research permits as identified in the EA - on Steller sea lions was issued by NMFS. NMFS has determined that the status quo alternative would not pose

harm to a listed species, nor would it result in jeopardy or adverse modification of critical habitat for Steller sea lions.

- NMFS response to comments on mortality: Although the definition of PBR is included in the MMPA, NMFS implemented the definition of PBR for endangered species in a more conservative manner. NMFS used a default value for a recovery factor of 0.1 for endangered species of marine mammals in calculating a PBR. This default value in the PBR calculation would reserve 90% of annual net production for recovery of endangered species and allow only 10% of annual net production to be authorized for taking incidental to human activities. NMFS concluded that keeping human-caused mortality at or below PBR calculated with a recovery factor of 0.1 would increase the recovery time of endangered marine mammals by no more than 10%, and this conclusion was supported by extensive simulation modeling at a later date (Wade, P.R. 1998. Calculating limits to the allowable human-caused mortality of cetaceans and pinnipeds. Marine Mammal Science 14:1-37). Research-related mortality at a level of 20 sea lions per year or less would not have an appreciable impact on the trend of the western stock and would not appreciably affect its prospects for recovery. Therefore, allowing a research accidental mortality limit of up to 20 sea lions per year would have a negligible impact on the western stock of Steller sea lions regardless of other human-caused mortality affecting the stock.
- NMFS response to comments on research coordination and need for monitoring: The permits contain a condition requiring development of a plan for coordinating research among permit holders and for monitoring the effects of such research within six months of permit issuance. This plan would be submitted to PR for review and final approval, and the plan would be implemented by amending the permits to include any additional conditions, as appropriate. In addition, the term of all new permits is limited to the duration of the two existing permits. In other words, no takes of Steller sea lions for scientific research have been authorized beyond June 30, 2005.
- Applicant responses to public comments: The responses of applicants for File Nos. 1016-1651, 800-1664, and 881-1668 to the comments from the public are attached. The applicants have responded to the satisfaction of the NMFS. In addition, the permits contain conditions regarding research coordination and monitoring, as well as measures intended to minimize the potential for adverse impacts and unnecessary duplication. The applicant for File No. 434-1669 did not respond, however, the permit has been conditioned to address the concerns expressed regarding activities in that application. There were no comments specific to Permit Nos. 358-1564 and 782-1532 that required responses from the Permit Holders.

Other Applicable Regulations

Oceans Act of 1992: Research will not occur in or near a National Marine Sanctuary.

CITES: Steller sea lions are not listed on Appendix I or II of the Convention on International Trade in Endangered Species, so this is not applicable.

ESA Section 7 Consultation: The consultation concluded, based on the available information, that the issuance of these Permits and Permit Amendments to take threatened and endangered Steller sea lions for scientific research, is not likely to adversely affect the continued existence of the endangered Steller sea lions, or result in the destruction or adverse modification of designated critical habitat.

National Environmental Policy Act: Scientific research and enhancement permits are, in general, categorically excluded from the requirement to prepare an Environmental Assessment (EA) or Environmental Impact Statement (EIS) (NOAA Administrative Order 216-6, May 20, 1999) since, as a class, they do not have a significant effect on the human environment. When a proposed action that would otherwise be categorically excluded involves a geographic area with unique characteristics, is the subject of public controversy based on potential environmental consequences, has uncertain environmental impacts or unknown risks, establishes a precedent or decision in principle about future proposals, may result in cumulatively significant impacts, or may have an adverse effect upon endangered or threatened species or their habitats, preparation of an EA or EIS is required.

Therefore, because of the unprecedented magnitude and intensity of proposed research, which is largely related to recent funding opportunities, and the controversy surrounding Steller sea lions and commercial fisheries, NMFS determined that further environmental review was warranted and prepared an EA. Based on the information in the EA, the Assistant Administrator for Fisheries signed a Finding of No Significant Impact on June 21, 2002.

RECOMMENDATION

The research is consistent with the purposes and policies of the MMPA, ESA and FSA. It is believed that the research will further a *bona fide* scientific purpose and does not involve unnecessary duplication. No adverse impacts to the populations or to the ecosystem as a result of the authorized activities are anticipated. Issuance of these permits, as required by the ESA, was based on a finding that the permits (1) were applied for in good faith, (2) will not operate to the disadvantage of the endangered species which is the subject of the permits, and (3) is consistent with the purposes and policies set forth in section 2 of the ESA. For these reasons, I recommend that you sign the Permits.

cc: Stuckey